

AMENDMENTS TO THE CLAIMS

The claims in this listing will replace all prior versions, and listings, of claims in the application.

LISTING OF CLAIMS

1-25. (Canceled)

26. (Currently Amended) An object recognition apparatus, comprising:

a plurality of cameras that each take an image of an object and obtain image data of said object;

a plurality of databases ~~that are each associated with one of the plurality of cameras and~~ that each have registered therein a plurality of model data concerning object models, each of the plurality of databases being associated with one of the plurality of cameras and one of a condition of an environment and a combination of conditions of the environment;

a search range focusing section that narrows down an area in each image data where a corresponding object is likely to exist and makes said area a search range; and

an object recognition section that selects one of the plurality of databases based on a camera corresponding to the image data and one of a detected condition of the environment and a combination of detected conditions of the environment, compares the image data in the search range in each image data with the plurality of model data in the ~~corresponding~~ selected database, detects model data presenting a highest similarity to the image data, and detects the object in the image data using said model data,

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wherein the object recognition section is provided for common use by the plurality of cameras.

27. (Previously Presented) The object recognition apparatus of claim 26, wherein the plurality of databases each have registered therein a plurality of feature vectors obtained by multiplying the image data from the corresponding camera by a feature extraction matrix provided for extracting features of a predetermined object, and

the object recognition section compares a plurality of feature vectors obtained by multiplying the image data in the search range in each image data with the plurality of feature vectors in the corresponding database and detects a feature vector in the database presenting a highest similarity with the object said feature vector represents.

28. (Canceled)

29. (Currently Amended) The object recognition apparatus of claim ~~[[28]]~~ 26, wherein the conditions comprise at least one of a distance between each camera and object, a direction of the object with respect to the camera, weather, and time of day.

30. (Currently Amended) An object recognition apparatus, comprising:
a plurality of cameras that each generate image data;
a plurality of databases that store model object data, each of the plurality of databases being associated with one of the plurality of cameras and one of a condition

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of an environment and a combination of conditions of the environment ~~each database~~
~~being associated with one of the plurality of cameras;~~

a search range focusing section that selects a reduced portion of the image data;
and

an object recognition section that selects one of the plurality of databases based
on a camera corresponding to the image data and one of a detected condition of the
environment and a combination of detected conditions of the environment, compares
the selected portion of the image data to the stored model object data, selects stored
model object data that has a highest similarity to the selected reduced portion of the
image data, and detects an object from the image data using the selected model object
data.

31. (Currently Amended) The object recognition apparatus of claim 30, wherein
each of the plurality of databases stores a plurality of model feature vectors, ~~each model~~
~~feature vector~~ obtained by multiplying model image data by a feature extraction matrix
configured to extract features of a predetermined object, and

the object recognition section generates an integrated vector based on the
selected reduced portion of the image data, multiplies the integrated vector by the
feature extraction matrix to generate an object feature vector, and selects a model
feature vector having a highest similarity to the object feature vector.

32. (Canceled)

33. (Currently Amended) The object recognition apparatus of claim [[32]] 30, wherein the conditions comprise at least one of a distance between a camera and an object, a direction of an object with respect to a camera, weather, and time of day.

34. (Currently Amended) A method for recognizing an object, comprising:
generating image data with one of a plurality of cameras;
selecting a reduced portion of the image data;
selecting a database from a plurality of databases, ~~the selected database being associated with a camera that generated the image data~~ based on a camera that generated the image data and one of a detected condition of an environment and a combination of detected conditions of the environment, each of the plurality of databases being associated with one of the plurality of cameras and one of a condition of the environment and a combination of conditions of the environment;

comparing the selected portion of the image data to model object data stored in the selected database;

selecting the stored model object data that has a highest similarity to the selected portion of the image data; and

detecting an object from the image data using the selected stored model object data.

35. (Currently Amended) The method of claim 34, further comprising[[:]]:
obtaining a plurality of model feature vectors by multiplying model image data by a feature extraction matrix configured to extract features of a predetermined object;

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storing a plurality of model feature vectors in each of the plurality of databases;
generating an integrated vector based on the selected portion of the image data;
multiplying the integrated vector by the feature extraction matrix to generate an
object feature vector; and
selecting a model feature vector having a highest similarity to the object feature
vector.

36. (Canceled)

37. (Currently Amended) The method of claim ~~[[36]]~~ 34, wherein the condition
comprises at least one of a distance between a camera and an object, a direction of an
object with respect to a camera, weather, and time of day.